

We claim:

1. A disc replacement device comprising a shell, a fulcrum, and a damping sleeve, wherein the shell comprises:
 - a first portion adapted for articulating with the fulcrum; and
 - a second portion adapted for coupling with the damping sleeve.
2. The disc replacement device of claim 1 wherein the fulcrum is a spherical ball bearing.
3. The disc replacement device of claim 1 wherein the first portion comprise a flat surface.
4. The disc replacement device of claim 2 wherein the first portion comprises a concave surface.
5. The disc replacement device of claim 1 wherein the first portion comprises an irregular surface.
6. The disc replacement device of claim 1 wherein the damping sleeve is configured to provides flexibility between the first and second shell portions.
7. The disc replacement device of claim 1 wherein the damping sleeve comprises varied thickness.
8. The disc replacement device of claim 1 wherein the shell comprises a metal substance.
9. The disc replacement device of claim 1 wherein the shell comprises shape memory alloys.

10. The disc replacement device of claim 1 wherein the shell comprises an orthopedic articular bearing material.
11. The disc replacement device of claim 1 wherein the damping sleeve comprises silicone.
12. The disc replacement device of claim 1 wherein the damping sleeve comprises shape memory alloys.
13. The disc replacement device of claim 1 wherein the damping sleeve is configured to produce a cavity for receiving a lubrication medium.
14. The disc replacement device of claim 1 further comprising an internal ring.
15. A shell system for use with a spherical ball bearing disc replacement device, the shell system comprising:
 - a first shell comprising a first portion adapted for coupling with a second shell and a second portion adapted for coupling with a damping sleeve; and
 - a second shell comprising a first surface adapted for coupling with the first portion of the first shell and a second surface adapted for articulating with the spherical ball bearing.
16. The shell system of claim 15 wherein the first shell comprises titanium.
17. The shell system of claim 15 wherein the second shell comprises at least one from the group consisting of ceramic, cobalt chrome, polymer, stainless steel, and polyethylene.
18. The shell system of claim 15 further comprising an internal ring.

19. A disc replacement device, comprising:

a first shell comprising an opening and an inner surface portion;
a pillar adapted for coupling with the first shell at the opening; and
a damping sleeve for coupling with the first shell at the inner
surface.

20. The disc replacement device of claim 19 wherein the pillar comprises at
least one shape memory alloy.

21. The disc replacement device of claim 19 further comprising:

a spherical shaped device positioned proximate to the first shell.

22. The disc replacement device of claim 19 further comprising an internal
ring.